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|------------|----------|--------------|----------------------|---|---------------------|
| 08/742,520 | 11/01/96 | UNCLASSIFIED | FIRST NAMED INVENTOR | T | ATTORNEY DOCKET NO. |
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FMC CORPORATION  
INTELLECTUAL PROPERTY LAW DEPT  
1735 MARKET STREET  
PHILADELPHIA PA 19103

C5M1/1007

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| EXAMINER<br>SHACKLEFORD, H |
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|                  |              |
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| ART UNIT<br>3501 | PAPER NUMBER |
|------------------|--------------|

DATE MAILED: 10/07/97

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
**08/742,520**

Applicant(s)  
**UNGEHUSRI**

Examiner  
**H. SHACKELFORD**

Group Art Unit  
**3501**



☒ Responsive to communication(s) filed on Jun 12, 1997

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1, 4, 5, and 12-20 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☒ Claim(s) 13-17 is/are allowed.

☒ Claim(s) 1, 4, 5, 12, and 18-20 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☒ The proposed drawing correction, filed on Jun 12, 1997 is ☒ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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1. The corrected or substitute drawings were received on 6-12-97. These drawings are approved.
2. The disclosure is objected to because of the following informalities: element numbers 33, 34, 35 and 36 are not discussed in the specification. Also, line 22 of page 3, "closes" should be --closest--?

Appropriate correction is required.

3. Claims 4 and 5 are objected to because of the following informalities: The preamble of claims 4 and 5 are not consistent with that of claim 1. Appropriate correction is required.

4. After further consideration, the limitations of cancelled claim 3 (now incorporated into claim 1) is not deemed to include allowable subject matter as stated in the previous office action.

The examiner is regretful of any inconvenience.

5. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

6. Claims 1, 4, 5, 19, and 20 are rejected under 35 U.S.C. § 103 as being unpatentable over Phillips or Ashton in view of Himes and Tauber, Jr. et al.

Ashton discloses a swivel joint having a flow passage having a hollow male connector, for example at 42b, with a plurality of outer annular arcuate grooves formed on the outer surface of the first end. They also show a hollow tubular female connector 48 having an annular recess which receives the outer surface of the male member, a plurality of inner annular grooves, and a shoulder adjacent the seal 50 and the first end of the male member. A plurality of ball bearings 49 are received in each race to facilitate rotation of the male and female connectors. Phillips discloses similar structure at both ends of section 10.

However, the radius of the arcuate grooves greater than the radius of each adjacent groove closer to the first end of the male member and the female member having a corresponding inner grooves are not disclosed.

Himes teaches providing the ball bearings in a rotatable shaft coupling in a tapered configuration wherein the radius of the arcuate grooves are greater than the radius of each adjacent groove closer a first end of the assembly. Tauber, Jr. et al. teaches of the recessed annular portions with an annular seal as claimed.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a tapered formation of the bearings as seen in Himes to the rotatable pipe couplings of Phillips or Ashton such that the radius of grooves of the male and female members are greater than each adjacent groove closer to the shoulder (of the female member) and the first end (of the male member) since Himes teaches that the tapered configuration prevents any possibility of seizing or binding, which may result from expansion due to high temperatures.

It would also have been obvious to provide the recessed portions and the seal as seen in Tauber, Jr. et al. to the assembly of Phillips or Ashton in view of Himes since such seals are well known for use in a swivel joints of similar construction, which is "not affected by high pressure and/or temperature cycling".

7. Claims 12 and 18 are rejected under 35 U.S.C. § 103 as being unpatentable over Phillips or Ashton in view of Himes and Tauber, Jr. et al, as applied to claims 1,, 4, 5, 19 and 20 above, and further in view of Press or DT 1,907,428.

Phillips, Ashton, Himes and Tauber, Jr. et al. are discussed above. However, the inner groove having a straight line segment at the apex is not specifically disclosed.

Press and DT '428 both teach of providing a straight line apex of the inner grooves in a swivel ball bearing joint assembly.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the straight line segment at the apex of the inner groove as seen in Press or DT

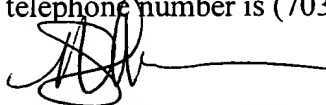
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'428 to the assembly of Phillips or Ashton in view of Himes and Tauber since Press teaches that the straight line apex allows for limited axial translation between the male and female members to facilitate a fluid-tight sealed connection.

Re claim 18, to provide the straight line segment on the outer groove as opposed to the inner groove as seen in Press and DT '428 to the assembly of Phillips or Ashton in view of Himes would have been obvious to one of ordinary skill in the art since Press teaches that the straight line apex allows for limited axial translation between the male and female members to facilitate a fluid-tight sealed connection and since it has been held that mere reversal of part is an obvious modification, In re Gazda, 104 USPQ 400. In the case of the present rejection, providing the straight line segment on the outer groove instead of on the inner groove as seen in Press and DT '428 would still allow for the limited axial translation between the male and female members for providing fluid-tight seal.

8. Claims 13-17 are allowable over the prior art of record.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to H. Shackelford whose telephone number is (703) 308-2978.



**H. SHACKELFORD  
PATENT EXAMINER  
GROUP 3500**

hcs  
October 6, 1997

✓